DOCUMENT RESUME

ED 334 965 IR 014 855

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TITLE The Concepts and Applications of Distance Education and Open Learning.
PUB DATE 89
NOTE 16p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Education; *Distance Education; Foreign Countries; Higher Education; Independent Study; *Learner Controlled Instruction; Nontraditional Education; *Open Education; *Open Universities; Performance Contracts; Personal Autonomy
IDENTIFIERS Australia; United Kingdom; United States; West Germany

ABSTRACT

In today's usage the distinction between open and distance education is often blurred. Indeed, open education and open learning are not synonymous with distance education and distance learning, a fact that is readily discernible by examining the characteristics of each. Teaching and learning in distance education are based on two elements: a pre-produced course, usually a self-instructional program, and non-contiguous communication between students and tutor. The role of distance education within the organizations offering it and the ways in which it is provided and supported also vary. Open education is also a form of nontraditional education in that it stresses student personal autonomy, independent study, performance contracts, and learner controlled instruction. In this case the term 'open' is interpreted as 'free from restrictions'; however, the degree of 'openness' may be constrained by the resources available to the learner and by particular organizational policies. While distance education often serves study that is strictly controlled, open learning is frequently brought about by distance education facilities. To anyone concerned with the development of student autonomy and liberal approaches to education, this application of distance education appears promising. (50 references) (DB)

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THE CONCEPTS AND APPLICATIONS OF DISTANCE EDUCATION AND OPEN LEARNING

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Open learning is a so far rather vague concept that is in vogue particularly in the UK at present. It is often coupled with the concept of distance education, a sometimes disliked but much less vague term. It is the aim of this paper to look into the two concepts, their meanings and their applications.

1. Problems of Demarcation

The origin of what is today called distance education is teaching and learning by correspondence. Correspondence education has been known for several generations, mainly as part of adult education. In fact, references to what was **probably** correspondence education occur as early as the 1720s and to what was indisputably correspondence education in the 1830s (Battenberg 1971 p.44, Bratt 1977 p.161, Holmberg 1986 pp.6-7). Correspondence education is then taken to denote teaching in writing by means of so-called self-instructional texts combined with communication in writing, i.e. by correspondence between students and tutors. There are thus two constituent elements of correspondence education, the teaching exposition and the non-contiguous communication, for both of which a supporting organisation is responsible.

As for both these elements media other than the written word became common and grew in importance, the term correspondence education was by many felt to be too narrow. In North America **independent study** (cf. Wedemeyer 1981) and **home study** (cf. Lambert 1983) have been used as competing terms. The same applies to **external study** in Australia and New Zealand (cf. the name of the Australian & South Pacific External Studies Association). Since the early 1970s **distance education** is the designation that has become gradually adopted in the United Kingdom (though resisted by the Association of British Correspondence Colleges), North America, Australia, New Zealand and other parts of the English-speaking world as well as internationally. The usage in this respect can be studied in the periodicals concerned with this type of education. Distance in this context occurs in the very first issue of the British Open University journal **Teaching at a Distance** in 1974 (pp. 35 and 55, e.g.) and in the names of the Australian journal **Distance Education**, the **Canadian Journal of Distance Education** and the U.S. **American Journal of Distance Education**. A kind of formal recognition of the term **distance education** occurred in 1982 when the Unesco-affiliated International Council for Correspondence Education (ICCEE) changed its name into the International Council for Distance Education (ICDE).

The adjective **open** is of very common occurrence in connection with distance education, the reason no doubt being the strong influence of the British Open University and other distance teaching organisations which have adopted practices corresponding to--and names containing--the adjective. **Open** in these names originally mainly referred to access; in itself it has nothing to do with distance education.

Distance education and open learning are thus separate entities. Dewal 1986 p. 8 makes this clear as follows:

> As distance education refers mainly to mode of delivery, open education refers to **structural** changes. A distance education institution can also be an open institution but not necessarily so. Open education refers to structural changes so as to make an institution open: open with respect to place; time; content of learning; mode of learning; etc. ...A distance teaching institution could also be a 'closed' one.

This contradicts a statement by Lewis & Spencer (1986 p. 17) to the effect that 'distance learning is a sub-category of open learning'. This statement was derived from the frequent use of 'some features of distance learning' in open learning (ibidem). To judge from the use made of the term **open learning** in the U.K. this seems to be a fairly common, although erroneous, interpretation. Foks (1987 p. 74) unambiguously corrects this mistake:

> Open learning is not synonymous with distance education; nor is distance education a sub-set of open learning. Distance education is a mode of learning with certain characteristics which distinguish it from the campus-based mode of learning.

Cf. also Cirrigliano 1983, Keegan 1986 pp.23-24, Lewis 1986, Northcott 1986, Cunningham 1987. The last-mentioned author equates open learning with self-managed learning (p. 41).

In today's usage the distinction between open and distance learning is sometimes blurred. Mary Thorpe testifies to this development:

> Undoubtedly "correspondence education" as a term has been overtaken by "distance education", which, in the United Kingdom at least, has in turn been overtaken by "open learning".
>
> (Thorpe 1987 p.56)

Frequent references to what are called open-learning methods seem to indicate that a change of meaning in this direction is a distinct possibility, however undesirable it may be from the point of view of conceptual clarity. Boot & Hodgson (1988 p.210) refer to a 'concern about the language of the marketplace as a source of constraint. This concern stems from the frequency with which open learning is discussed in terms of product, package, delivery and market'. In the same paper (p. 198) the authors point out that the term **open learning** 'seems to have become a shibboleth in the education and training world. Thus, for many, its utility in making distinctions between different educational philosophies or practices has become of secondary importance. Its prime importance is in that

those who can successfully apply it to their work can demonstrate that they are members of the new orthodoxy. And in the currrent economic climate the benefits of such membership can be great. It is not surprising, therefore, that the term remains undiscriminating and its use indiscriminate. The unfortunate effect, however, is that it is possible for discussions about open learning to take place with some or even all of the participants unaware that they are discussing different things. This in turn means that, far from being a single consistent educational philosophy, open learning becomes a mechanism which blurs philosophical differences.'

Thorpe & Grugeon (1987 p.2) rightly describe open learning as 'an umbrella term which refers to a whole series of varied educational initiatives and provision'. It is evident that open learning can, whenever suitable, make use of and benefit from distance education. It can also wholly rely on face-to-face interaction.

2. Working Definitions

As the ideas behind the concepts of distance education and open learning evidently generate fruitful thinking relevant both to theories of education and educational practice it seems useful to try to describe and delineate these concepts with some lucidity. Here are my suggestions:

> 2.1 Distance education covers the various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which, nevertheless, benefit from the planning, guidance, and tuition[1] of a supporting organization.

This definition of mine (Holmberg 1977 p.9), strongly influenced by Delling (1987 and earlier), has been widely accepted (cf. Keegan 1980a and b, whose propositions have been analysed by Baath 1981).[2] Distance study denotes the activity of the

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[1]I use tuition in its British sense, meaning tutoring, teaching.

[2]The facts that elements of face-to-face study may be involved (as supplementary aids) and that I refer to a supporting organization has caused Tight 1988 to dissociate himself from my definition and to suggest one 'far less precise and restrictive, allowing for group learning, face-to-face teaching and private study to take place within a general distance education format...'. Tight's alternative definition, which I find no reason to argue about as it makes sense as a loose description, runs like this: 'Distance education' refers to those forms of organized learning which are based on the physical separation of learners and those (other than the learners themselves) involved in the organization of their learning. This separation may apply to the whole learning process or only to certain stages or elements of it. Both face-to-face and private study may be involved, but their

students, distance teaching that of the tutorial organizations, particularly their authors and tutors.

2.2 Open learning implies unimpeded access to study facilities as well as avoidance of restrictions or conditions that curtail students' free learning.

This definition goes well with Foks' interpretation:

> Open learning is a state of mind. It is an approach to the planning, design, preparation and presentation of courses by educators, and an approach taken to the selection and use of learning strategies and associated resources by students. This approach seeks to provide students with as much choice and control as possible over content and learning strategies.
>
> (Foks 1987 p.76)

3. Basic Characteristics of Distance Education and Open Learning

3.1 Distance Education

Teaching and learning in distance education are with few exceptions based on two constituent elements: a pre-produced course and non-contiguous communication between students and tutor.

The **pre-produced courses** used in distance education are--or are meant to be--of a self-instructional type. They are usually in print and often supplemented by recorded audio presentations. Sometimes broadcast programmes (radio and/or TV), video recordings, viewdata/videotex and other supplementary media are used. Pre-produced courses may be self-contained or may function as guides to the study of set or suggested texts, recordings etc. They are usually divided into units, at the end of which students are invited to answer (and ask) questions, compute, translate, solve problems, write essays etc. and to submit this work for correction and comment. Tasks for submission to the supporting organizations are usually referred to as assignments. With few exceptions courses follow fairly strict curricula. In some cases students' own needs and inclinations exert decisive influence on the learning content. This is usually brought about by assignments and project work.

These activities belong to the second constituent element non-contiguous communication (by which, of course, is meant two-way traffic), whether in writing, on the telephone, on audio tape, by computer or in any other way. Its role varies

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function will be to supplement or reinforce the predominantly distance interaction' (Tight 1988 p. 59).

in distance-education systems. In some it is the basic element, in others it is partly or even largely replaced by self-checking exercises and/or face-to-face sessions. Between these extremes there are various intermediary positions acknowledging face-to-face interaction as a subsidiary procedure, for instance on the one hand that of the British Open University which, though catering for complete non-contiguous two-way communication, systematically organises face-to face contacts in study centres and during summer courses, on the other hand that of many private distance-teaching organisations in Europe, the USA and elsewhere which offer two-way communication mainly by non-contiguous means, but make occasional use of face-to-face sessions. The possibilities that the communication element offers for individualisation, independent work and 'openness' are exploited to very different degrees, sometimes not at all.

The role of distance education within the organisations offering it and the ways in which it is provided and supported also vary. Two opposite general approaches are typical of well-known distance-teaching organisations. There are what I have elsewhere (Holmberg 1985a pp.9-10) called large-scale and small-scale systems of distance education. Whereas the former develop courses for hundreds and thousands of students, often as a result of team work, and then engage groups of tutors to comment on students' work and teach in other ways, the small-scale approach implies causing teachers develop courses exclusively for their own students so that the course author is identical with the tutor.

The **large-scale organisations**, as typically represented by the British Open University, the German FernUniversitat and the large correspondence schools, can be regarded as innovations outside the traditional educational systems in that they apply what Otto Peters calls industrial working methods (division of labour, rationalisation, economies of scale etc: cf. Peters 1973 and 1983). As indicated above these working methods are well compatible with individualisation and support of student autonomy.

The **small-scale organisations**, on the other hand, which through their limited target groups would seem more easily to be able to adapt themselves to their students' needs and wishes, usually find it important to keep within the main stream of education. The University of New England in Australia can be seen as the prototype of small-scale distance-education organisations, which are of particularly common occurrence among Australian 'dual-mode' universities, i.e., universities with both traditional on-campus activities for resident students and external study for distant students. Far-reaching parallels between the two forms of study are considered desirable and are brought about. Periods of residential teaching are often required also of the external 'distant' students. Even the same tutor-student ratio for distance and on-campus study is considered advantageous--at least in the external-study system of the University of New England--which implies a complete rejection of Peters' view of distance education as 'industrialised' (Smith 1979). While strict parallelism with traditional university study implies unavoidable restrictions and leads to a certain amount of rigidity, the small-scale systems need, in principle, be neither more nor less concerned with 'openness' in

the sense that students are given the opportunity to influence the content and other aspects of the study than the large-scale systems.

The two approaches outlined represent different views of distance education, the large-scale one claiming to be a mode of education in its own right, the small-scale one often merely functioning as a form of distribution replacing, when necessary, traditional types of teaching and learning. Both can be applied to serve both student autonomy and knowledge acquisition through study strictly controlled by regulations.

3.2 Open Learning

The interpretation of **open** as meaning **free from restrictions** makes it necessary to expect of open learning institutions

a) open access, i.e. absence of entrance requirements, the decisive factor for enrolment being the students' motivation and individual decision; this is practised by the British Open University, e.g. (as far as the capacity of the University allows)

b) freedom for the student independently to decide on study goals, contents, methods and assessment procedures, if any; this is often aimed at, partly applied but rarely fully practised in any institutional form.

This thinking agrees with Cunningham's "characteristics of ideal open learning":

1. It is open to learners to learn
   - when they want (timing, frequency, duration)
   - how they want (modes of learning, for example lecture, seminar, project, mediation, reading or physical exercise)
   - what they want (that is, learners can define what constitutes learning to them).

   All of the above may be constrained by the resources available to the learner and by particular organizational policies. In the case of colleges and universities, learners may need to negotiate what they learn against the levels or standards indicated for a particular qualification.

2. Learners are involved in assessment of their own learning, specifically in terms of negotiating criteria and methods by which assessment takes place. They are also involved in the process by which judgements are made (for example, on pass/fail, on grades or on marks).

3. It is open to learners to influence the policy and operation of the course or programme. This includes openness in committees and other bodies where key decisions are taken which affect learners.

(Cunningham 1987 pp. 40-41)

Support of open learning can evidently include teaching. Teaching can be and frequently implicitly is regarded as knowledge transfer "from one vessel to another" (Fox 1983 p. 151), a view which must be rejected as too narrow in open learning. The author last quoted, Dennis Fox, identifies three further views of teaching:

> There is the shaping theory which treats teaching as a process of shaping or moulding students to a predetermined pattern. Thirdly, there is the travelling theory which treats a subject as a terrain to be explored with hills to be climbed for better viewpoints with the teacher as the travelling companion or expert guide. 'Finally, there is the growing theory which focusses more attention on the intellectual and emotional development of the learner.

Similar considerations have caused Boot & Hodgson 1987 to identify two possible incompatible purposes of education, 'dissemination of stored knowledge' and 'development of the whole person' (p. 6):

> The essence of the dissemination orientation is open access. It centres on the preparation and packaging of materials in a form that will enable widespread availability for individualized study, free from administrative constraints. In comparison with this the development orientation could reinforce a kind of educational elitism...since the appropriateness of materials and other resources cannot be pre-specified, the development orientation is dependent upon access to a rich resource reservoir...Set against this, the essence of the development orientation is open curriculum, if that is not a contradiction in terms. It centres on the provision of structures and processes to enable individuals to control the direction and content of their own learning, and to support them in the creation and validation of their own meanings. By comparison the dissemination orientation, with its emphasis on the acquisition of preconstructed knowledge and movement toward predetermined ends can result in individuals being deprived of the freedom to become their own meaning makers.
>
> (Boot & Hodgson 1987 pp. 14-15)

The authors quoted suggest that educators look further into the question whether the two orientations are really incompatible or simply serve different purposes and perform different functions in the common quest for openness' (p. 14) and finish as follows:

> The challenge facing all those genuinely interested in fully open learning is: "Is it possible to combine the best of both orientations?" We are not sure what an educational provision based upon "developmental dissemination" would look like, but we do believe it is worth working towards (ibidem p.15).

The trend towards open learning in this spirit has a precursor in the liberal vision of U.S. independent study as described by Wedemeyer 1981 p. 36:

1. Instruction should be available any place where there are students--or even only one student--whether or not there are teachers at the same place at the same time.
2. Instruction should place greater responsibility for learning on the student.
3. The instructional plan or system should free faculty members from custodial duties so that more of the teacher's and learner's time can be given to truly educational tasks.
4. The instructional system should offer learners wider choices (more opportunities) in subjects, formats, methodologies.
5. The instructional system should use, as appropriate, all the teaching media and methods that have been proven to be effective.
6. The instructional system should mix and combine media and methods so that each subject or unit within a subject is taught in the most effective way.
7. The media and technology employed should be "articulated" in design and use; that is, the different media or technologies should reinforce each other and the structure or the subject matter and teaching plan.
8. The instructional system should preserve and enhance opportunities for adaptation to differences among individual learners as well as among teachers.
9. The instructional system should evaluate student achievement not by raising barriers concerning the **place** where the student studies, the **rate** at which he studies, the **method** by which he studies, or even the **sequence** in which he studies, but instead of evaluating as directly as possible the achievement of learning goals.
10. The system should permit students to start, stop, and learn at their own paces, consistent with learner short--and longrange goals, situations, and characteristics.

While several of the desiderata listed by Wedemeyer are practised by quite a few organisations, full application of open learning as defined above occurs in exceptional cases only. School curricula, examination requirements, professional demands etc. are often so prescriptive that students' in independence must be narrowly limited. Scholarly tradition tends to exert similar influence. One really consistent application is found in what is called **contract learning** which allows students--and expects it of them--that, after a period of explorative study, they should develop and suggest a complete study programme including **what** is to be studied, **how** it is to be studied, **what level** is to be attained as well as what **kind of assessment** is to check on the outcome. Full degrees can be acquired in this way, for instance at the School for Independent Studies of North East London Polytechnic (Bradbury et al. 1982. Hinds 1987; on contract learning see further Coughlan 1980).

Evidently any consistent application of open learning is--like large-scale systems of distance education--an extra-paradigmatic innovation. It is hardly compatible with the main stream of organised education.

4. Open Learning in distance education

A number of attempts as far as possible to apply the principles of open learning to distance education have been and are being made. Decisive for these are, as a rule, on the one hand general approaches like the view of learning as the intellectual and emotional development of the student rather than as knowledge transfer (in the spirit of Perry 1970 and Fox 1983) and Ausubel's subsumption theory, on the other hand specific approaches developed for independent study like Delling's process model (Delling 1987), conversation theory (Forsythe 1986, Holmberg 1985b), communication procedures (Rekkedal 1985) and contract learning referred to under 3.2 above.

Typical of all these approaches is that they are based on cognitivist rather than behaviourist thinking. They influence both the development of courses and the communication element.

Evidently the presentation of learning matter cannot be confined to dissemination of information. As an educational endeavour it must engage students in an intellectual activity that makes them try out ideas, reflect, compare and apply critical judgment to what is studied. This necessarily includes making use of insights acquired in various connections and cannot be limited to purely intellectual experiences; there is an affective aspect to be considered as there is in anything that engages the mind and develops the personality.

It is the task of course developers to assist students' learning in that they examine the learning matter by argument, reflect in writing or recording and cause students to reflect. Reflection in this context has been understood as "a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations. It may take place in isolation..." (Boud, Keough & Walker 1985 p. 19). These activities are compatible with personal approaches, bring out communicative aspects and can lead to conversation-like presentation principles.

This means more than rejecting information dissemination as the sole function of learning-matter presentation. It necessarily entails consequences for the general approach, the way students are addressed and treated. Under no circumstance can they be seen as passive recipients of wisdom conveyed by the medium of the distance-teaching course. Instead they are partners whose knowledge, experience and capacity are relied on to contribute to a real and/or simulated communication that promotes learning and the development of new insights.

While it is true that the presentation of learning matter in a preproduced course, written, recorded, broadcast of made available in any other way, is technically a case of one-way traffic (to be supplemented by interaction, i.e., two-way traffic), the approach described can simulate informal communication which causes and--in the author's opinion--required personal **rapport** between course developers and students. Empathy would thus seem to be an important course developer's quality.

I have long been concerned with the characteristics of distance-teaching courses meeting the requirements indicated and have introduced and operationalised the concept of guided didactic conversation in this context (Holmberg 1960 p.15, 1983, 1985b and elsewhere: Holmberg, Schuemer & Obermeier 1982).

A basic general assumption is that real learning is primarily an individual activity and is attained only through an internalising process.

The conversation that can be simulated in a pre-produced course is primarily felt to be one between the course developers and the individual students. The former build up an image of the students expected to study their courses and endeavour to address them as individuals. This leads to a simulated "conversation", which tends to encourage individual text elaboration.

More sophisticated conversation theories of relevance in this context have been developed by Pask 1976, Forsythe 1985 and 1986, Thomas & Harri-Augstein 1977 and others.

These endeavours to engage students in learning felt to be relevant to them personally basically imply creating **rapport** between them and the tutorial organisation. They indicate possibilities to bring about a merger of distance education and open learning.

Attempts of this kind have had some organisational consequences. Thus, o the one hand, Empire State College in the State of New York (Worth 1982) and the School of Independent Studies of North East London Polytechnic (Hinds 1987), precursors in the field of open learning through their contract-learning schemes, have adopted distance-education methods, on the other hand Murdoch University in Western Australia with a strong distance-education tradition behind it has adopted contract learning in its development of distance-education procedures (Marshall 1984).

Student autonomy is evidently what the thinking behind this is both based on and wants to develop. One part of an international study of the FernUniversitat Institute for Research into Distance Education testifies to wide-spread endeavours to maintain and develop student autonomy and to the effectiveness of approaches favouring student independence. These approaches include individual (free) pacing of the study as to assignment submission, the

possibility for students to influence the study content and encouraging querying attitudes among them. An interesting finding is that about two thirds of the organisations studied do not pace their students but allow them to submit assignments when it suits their individual time-tables (Graff & Holmberg 1988, p. 90). This seems to be a tangible sign of belief in the value of student independence.

The concerns of student independence to some extent overlap with what has been described as learner friendliness, a concept that requires personal counselling and tutorial services, help to attain success, frequent and easy contact with tutors (mediated or face-to-face) etc.

It seems worth mentioning that in the FernUniversitat study a clear correlation was found between success rates and approaches favouring student autonomy. Correlation coefficients between the learner-friendliness scores and success indicate that also these, some of these or the application of the whole concept can have favourable effects on students' success. The study has included the evaluation of data from some 200 distance-teaching organisations in various parts of the world.

5. Conclusion

The inescapable conclusion is that, while distance education often serves study that is strictly controlled as to entrance qualification, content, pacing etc., open learning can also well be brought about by distance-education facilities. To anyone concerned with the development of student autonomy and liberal approaches to education the latter application of distance education appears particularly interesting and promising.

References

Ausubel, D.P., Meaningful reception, learning and retention. In Ausubel D. P. (ed.), Education psychology. A cognitive view. New York: Holt, Rinehart & Winston. 1968, pp. 83-115.

Baath, J. A. On the nature of distance education. Distance Education, 2.2. 1981, pp. 212-219.

Battenberg, R. W., The Boston Gazette. March 20, 1728. Epistolodidaktika. l, 1971, pp. 44-45.

Boot, R. L. & Hodgson, V. E., Open learning: meaning and experience, In Hodgson, V.E., Mann, S. J. & Snell, R. (eds.), Beyond distance teaching - towards open learning, Milton Keynes: Open University Press. 1987, pp. 5-15.

Boot, R. L. & Hodgson, V. E., Open learning: Philosophy or expediency, Programmed Learning and Educational Technology, 25, 3, 1988, pp. 197-204.

Boud, D., Keogh, R. & Walker, D., What is reflection in learning? In Boud, D., Keogh, R. & Walker, D. (eds.), Reflection: turning experiences into learning, London: Kogan Page. 1985.

Bradbury, Ph., Hinds, E., Humm, M. & Robbins, D., Innovations in independent study at North East London Polytechnic. In Teather, D.C.B. (ed.), Towards the community university. Case studies of innovation and community service, London: Kogan Page. 1982, pp. 48-68.

Bratt, J., Engelskundervisningens framvaxt i Sverige, Tiden fore 1850, Stockholm: Foreningen for svensk undervisnings-historia, 1977.

Cirigliano, G.F. J. La educacion abierta. Buenos Aires: El Ateneo, 1983.

Coughlan, R., The mentor role in individualized education at Empire State College, Distance Education, 1, 1, 1980, pp. 1-12.

Cunningham, J., Openness and learning to learn. In Hodgson, V.E., Mann, S. J. & Snell, R. (eds.) Beyond distance teaching - towards open learning, Milton Keynes: The Open University. 1987, pp. 40-58.

Delling, R. M., Versuch der Grundlegung zu einer allgemeinen Ferunterrichtstheorie. Epistolodidaktika, 4, 1966, pp. 209-226.

Delling, R. M., towards a theory of distance education. ICDE Bulletin, 13, January 1987. pp. 21-35.

Dewal, O.S., Open School, India: The preliminary years. 1979 - 1983. A case study. Deakin Open Education Monographs, No. 3. Victoria: Deaking University, The Distance Education Unit, 1986.

Foks, J., Towards open learning. In Smith, P. & Kelly, M. (eds.), Distance education and the mainstream. London: Croom Helm, 1987, pp. 74-92.

Forsythe, K., A view of[ ]: the learning system as a new paradigm for the information age. Paper presented to the XXXII Annual World Assembly of the International Council on Education for Teachers in Vancouver, 1985.

Forsythe, K., Understanding the effectiveness of media in the learning process. Paper presented at the World Congress on Education & Technology in Vancouver, Victoria: Learning Systems Knowledge Network, May 1986.

Fox, D., Personal theories of teaching, Studies in Higher Education, 8, 2, 1983, p.151-163.

Graff, K. & Holmberg, B. (eds.) International study on distance education: a project report, Hagen: FernUniversitat, ZIFF, 1988.

Hinds, E., The school for independent study and international links, ZIFF Papiere, 69, Hagen: FernUniversitat, 1987.

Holmberg, B., On the method of teaching by correspondence, Lunds universitets arsskrift, N.F. Avd. 1, Bd. 54, Nr. 2 Lund: Gleerup, 1960.

Holmberg, B., Distance education: a survey and bibliography, London: Kogan Page, 1977.

Holmberg, B., Guided didactic conversation in distance education. In Sewart, K., Keegan, D., & Holmberg, B. (eds.), Distance Education: International Perspectives, London: Croom Helm, 1983, pp. 114-122.

Holmberg, B., Status and trends of distance education, 2nd revised edition, Lund: Lector Publishing, 1985a.

Holmberg, B., The feasibility of a theory of teaching for distance education and a proposed theory. ZIFF Papiere, 60, Hagen: FernUniversitat, 1985b.

Holmberg, B., Growth and structure of distance education, Beckenham: Croom Helm, 1986.

Holmberg, B., Schuemer, R. & Obermeier, A., Zur Effizienz des gelenkten didaktischen Gespraches, With an English summary, Hagen: FernUniversitat. ZIFF, 1982.

Keegan, D., On defining distance education. Distance Education, 1, 1, 1980a. pp. 13-36.

Keegan, D., On the nature of distance education, ZIFF Papiere, 33, Hagen: FernUniversitat, 1980b.

Keegan, D., The foundations of distance education. London/Sydney/Dover, N.H.: Croom, Helm, 1986.

Lambert, M.P., New Course planning. The strategy and tactics of developing a home study course. Washington: National Home Study Council, 1983.

Lewis, R., What is open learning? Open Learning, 1, 2, 1986. pp. 5-10.

Lewis, R., & Spencer, D., What is open learning? London: Council for Educational Technology, 1986.

Marshall, L. et al., Independent study contracts. A guide for students considering applying for independent study contracts and for staff who supervise them. Murdoch: Murdoch University, 1984.

Northcott, P., Distance education and open education: an exploration of the terms. Open Campus. 12. Victoria: Deakin University, Distance Education Unit, 1986. pp. 34-40.

Pask, G., Conversational techniques in the study and practice of education, British Journal of Educational Psychology, 46, 1976, pp. 12-25.

Pask, G., Styles and Strategies of learning, British Journal of Educational Psychology, 46, 1976, pp. 126-148.

Perry, W., Forms of intellectual and ethical development in the college years, New York: Holt, Rinehart & Winston, 1970.

Peters, O., Die didaktische Struktur des Ferunterrichts. Untersuchungen zu einer industrialisierten Form des Lehrens und Lernens. Tubinger Beitrage zum Ferstudium 7. Weinheim: Beltz. 1973.

Peters, O., Distance teaching and industrial production: a comparative interpretation in outline. In Sewart, D., Keegan, D. & Holmberg, B. (eds.), Distance education. International perspectives. London: Croom Helm, 1983, pp. 95-113.

Rekkedal, T., Introducing the personal tutor/counsellor in the system of distance education. Oslo: NKI, 1985.

Smith, K. D., External studies at New England, Armidale, NSW: The University of New England, 1979.

Thomas, L. F. & Harri-Augstein, E. S., Learniung to learn: The personal construction and exchange of meaning. In Howe, M.J.A. (ed.). Adult learning. Psychological research and applications. London: Wiley, 1977.

Thorpe, M., Conference report: Association of European Correspndence Schools (AECS) Autumn Congress 1986 in Munich, Open Learning, 2, 2, 1987, p.56.

Thorpe, M., & Grugeon D. (eds.), Open learning for adults, Harlow/Essex: Longman Group UK Ltd., 1987.

Tight, M., Defining distance education. ICDE Bulletin, 18, 1988. pp. 56-60.

Wedemeyer, C.A., Independent study. In Deighton, L. (ed.), The Encyclopedia of Education, 4, New York: Macmillan and Free Press, 1971. pp. 548-557.

Wedemeyer, C.A., Learning at the back door. Reflections on non-traditional learning in the lifespan. Madison: University of Wisconsin, 1981.

Worth, V., Empire State College/State University of New York. Center for Distance Learning, DERG Papers, 7, Milton Keynes: The Open University, 1982.